RECEIVING SNR (dB)	SUBCARRIER n=1	SUBCARRIER n=2	SUBCARRIER n=3	SUBCARRIER n=4	S(K)
USER1 (K=1)	5.5	4.9	0	5.6	3
USER2 (K=2)	0	12.9	4.9	5.7	3
USER3 (K=3)	4.7	4.6	0	4.3	3
USER4 (K=4)	6.7	6.0	10.9	3.3	4
U(n)	3	4	2	4	

FIG.1

RECEIVING SNR (dB)	SUBCARRIER n=1	SUBCARRIER n=2	SUBCARRIER n=3	SUBCARRIER n=4	S(K)
USER1 (K=1)	5.5	4.9	0	5.6	3
USER2 (K=2)	0	12.9	0	5.7	2
USER3 (K=3)	4.7	4.6	0	4.3	3
USER4 (K=4)	6.7	6.0	0	3.3	3
U(n)	3	4	0	4	

FIG.2

RECEIVING SNR (dB)	SUBCARRIER n=1	SUBCARRIER n=2	SUBCARRIER n=3	SUBCARRIER n=4	S(K)
USER1 (K=1)	5.5	0	0	5.6	2
USER2 (K=2)	0	0	0	5.7	1
USER3 (K=3)	4.7	0	0	4.3	2
USER4 (K=4)	6.7	0	0	3.3	2
U(n)	3	0	0	4	

FIG.3

	SUBCARRIER n=1	SUBCARRIER n=2	SUBCARRIER n=3	SUBCARRIER n=4
USER1 (K=1)	○	×	×	×
USER2 (K=2)	×	○	○	○
USER3 (K=3)	×	×	×	×
USER4 (K=4)	×	×	×	×

FIG.4

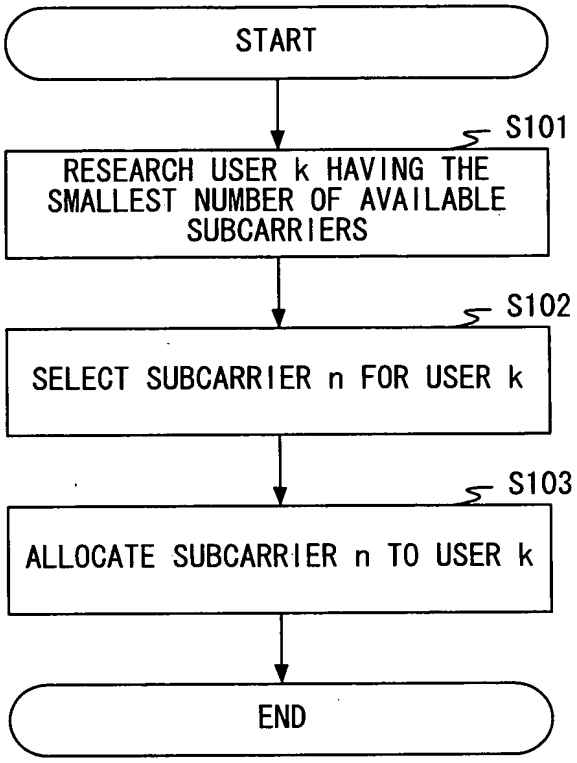
START
S101
RESEARCH USER k HAVING THE SMALLEST NUMBER OF AVAILABLE SUBCARRIERS
S102
SELECT SUBCARRIER n FOR USER k
S103
ALLOCATE SUBCARRIER n TO USER k
END

FIG.5

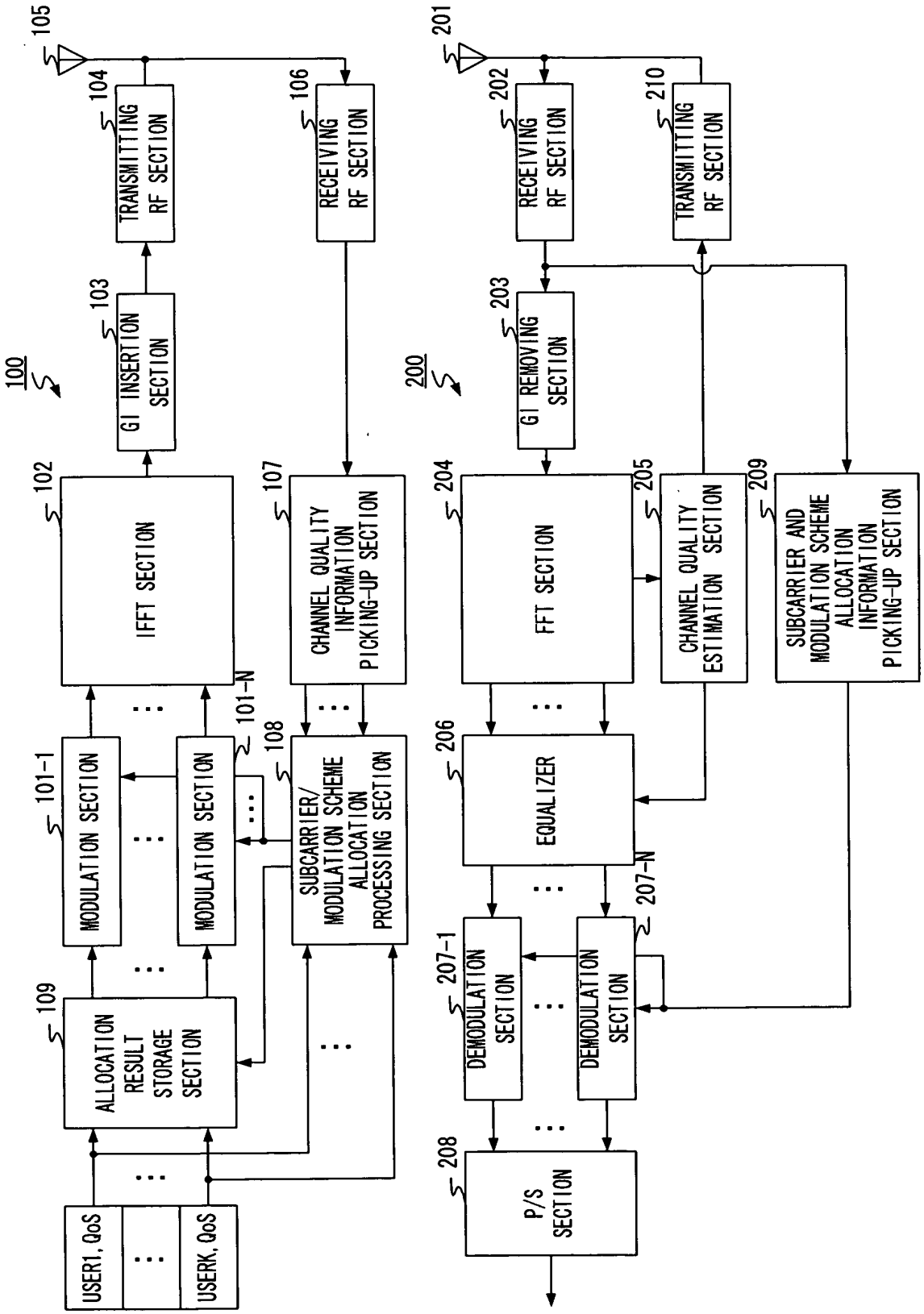
100
105
104
TRANSMITTING RF SECTION
106
RECEIVING RF SECTION
103
GI INSERTION SECTION
102
IFFT SECTION
107
CHANNEL QUALITY INFORMATION PICKING-UP SECTION
101-1
MODULATION SECTION
101-N
MODULATION SECTION
108
SUBCARRIER/ MODULATION SCHEME ALLOCATION PROCESSING SECTION
109
ALLOCATION RESULT STORAGE SECTION
USER1, QoS
USERK, QoS
200
201
RECEIVING RF SECTION
202
TRANSMITTING RF SECTION
210
GI REMOVING SECTION
203
FFT SECTION
204
CHANNEL QUALITY ESTIMATION SECTION
205
SUBCARRIER AND MODULATION SCHEME ALLOCATION INFORMATION PICKING-UP SECTION
209
EQUALIZER
206
DEMODULATION SECTION
207-1
DEMODULATION SECTION
207-N
P/S SECTION
208

FIG.6

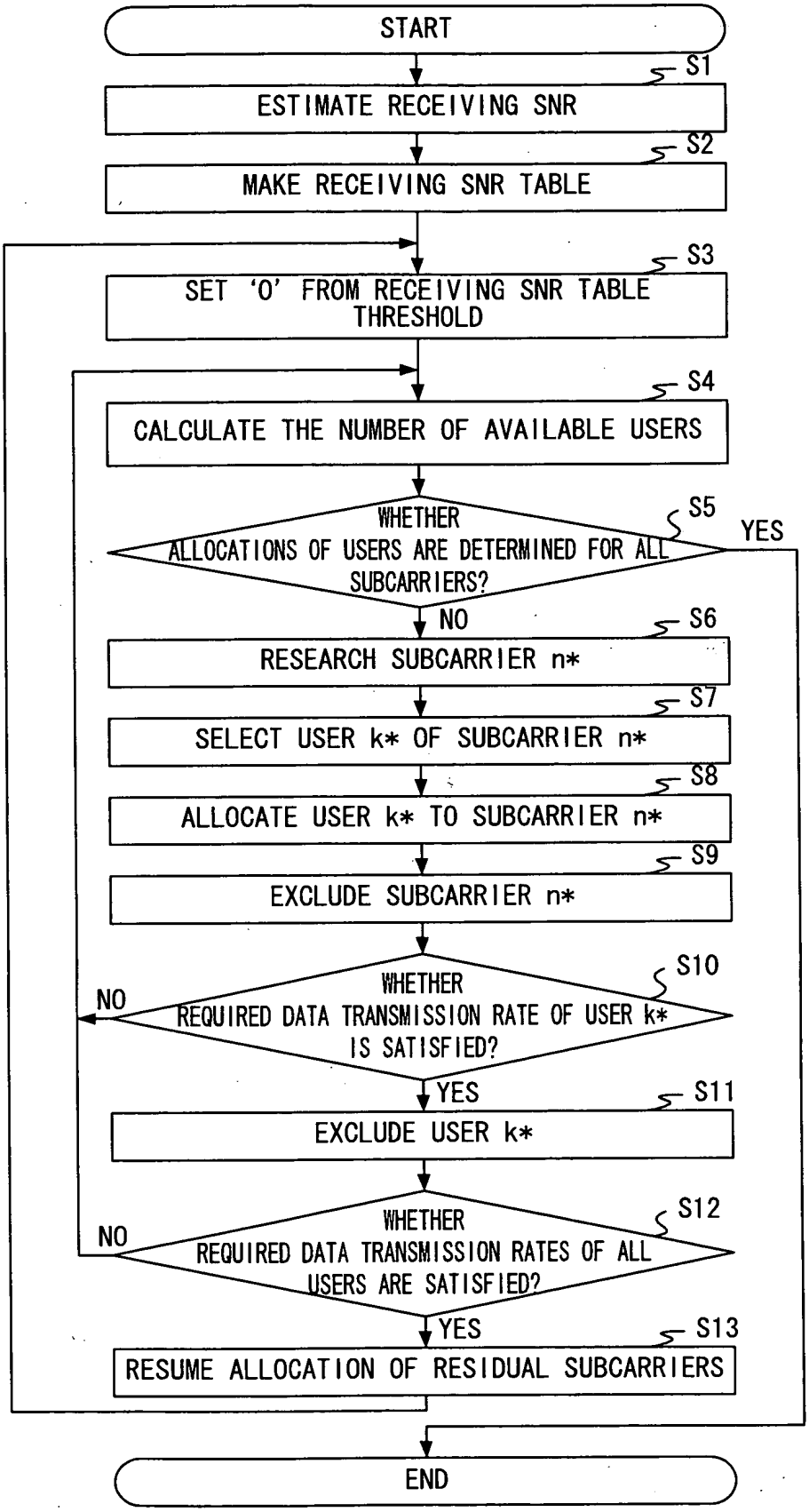
START
S1
ESTIMATE RECEIVING SNR
S2
MAKE RECEIVING SNR TABLE
S3
SET '0' FROM RECEIVING SNR TABLE THRESHOLD
S4
CALCULATE THE NUMBER OF AVAILABLE USERS
S5
WHETHER ALLOCATIONS OF USERS ARE DETERMINED FOR ALL SUBCARRIERS?
YES
NO
S6
RESEARCH SUBCARRIER n*
S7
SELECT USER k* OF SUBCARRIER n*
S8
ALLOCATE USER k* TO SUBCARRIER n*
S9
EXCLUDE SUBCARRIER n*
S10
WHETHER REQUIRED DATA TRANSMISSION RATE OF USER k* IS SATISFIED?
NO
YES
S11
EXCLUDE USER k*
S12
WHETHER REQUIRED DATA TRANSMISSION RATES OF ALL USERS ARE SATISFIED?
NO
YES
S13
RESUME ALLOCATION OF RESIDUAL SUBCARRIERS
END

FIG.7

RECEIVING SNR (dB)	SUBCARRIER n=1	SUBCARRIER n=2	SUBCARRIER n=3	SUBCARRIER n=4
USER1 (K=1)	5.5	4.9	0	5.6
USER2 (K=2)	0	12.9	0	5.7
USER3 (K=3)	4.7	4.6	0	4.3
USER4 (K=4)	0	0	0	0
U(n)	2	3	0	3

FIG.8

RECEIVING SNR (dB)	SUBCARRIER n=1	SUBCARRIER n=2	SUBCARRIER n=3	SUBCARRIER n=4
USER1 (K=1)	0	0	0	0
USER2 (K=2)	0	12.9	0	5.7
USER3 (K=3)	0	4.6	0	4.3
USER4 (K=4)	0	0	0	0
U(n)	0	2	0	2

FIG.9

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	SUBCARRIER n=1	SUBCARRIER n=2	SUBCARRIER n=3	SUBCARRIER n=4
USER1 (K=1)	○	×	×	×
USER2 (K=2)	×	○	×	×
USER3 (K=3)	×	×	×	○
USER4 (K=4)	×	×	○	×

FIG.10